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(54) Abstract Title

Air freshener

(57) The air freshener 10 has the appearance of a decorative snow globe and comprises a transparent container 15, an opaque, volatile base gel layer 30, a transparent, volatile top gel layer 20, and decorative objects 40 embedded in the top gel layer 20. A method of making the air freshener is also disclosed.

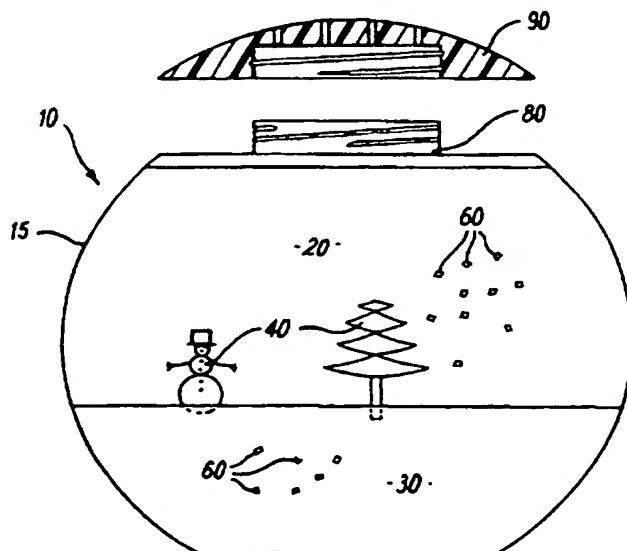


Fig 1

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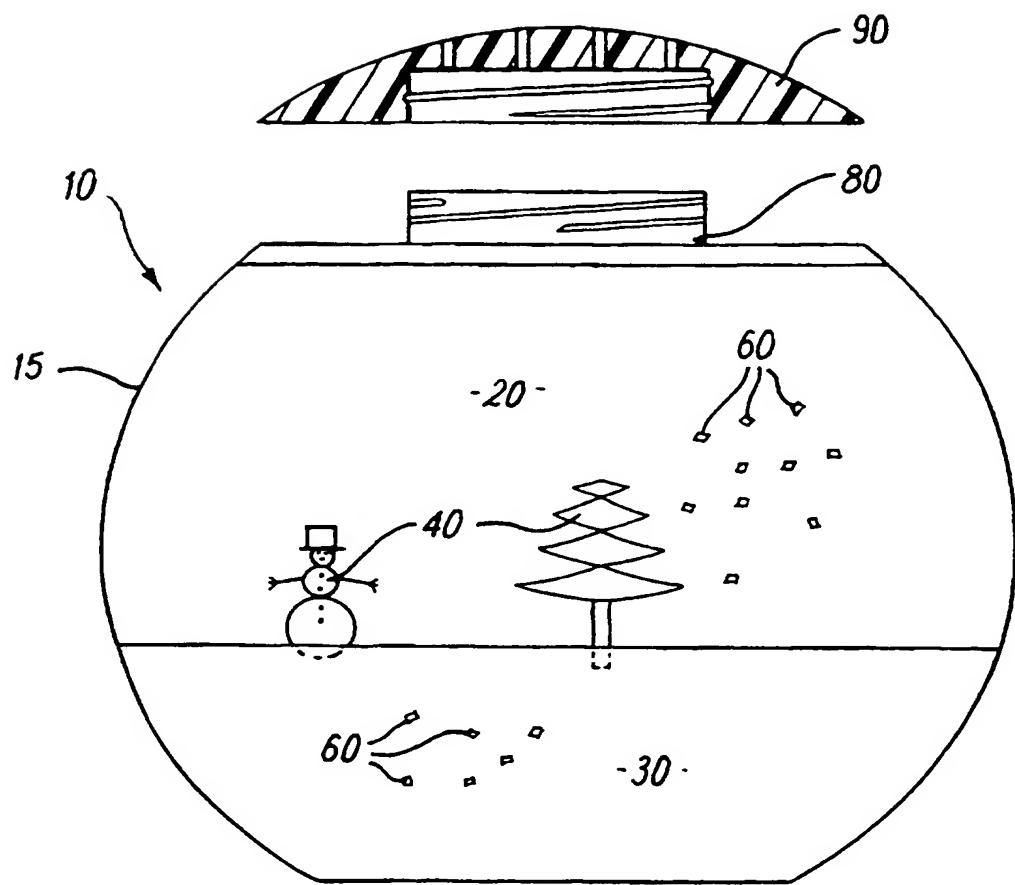


FIG. 1

SNOW GLOBE AIR FRESHENER AND METHOD OF MANUFACTUREFIELD AND BACKGROUND OF THE INVENTION

The present invention relates generally to air  
fresheners and in particular to a new and useful decorative  
5 air freshener and method for manufacturing the air  
freshener.

Display articles containing solid objects in a  
translucent material are known. Snow globes are commonly  
sold as souvenirs. These snow globes usually have a scene,  
10 or object, contained in a spherical enclosure of clear glass  
or plastic mounted on a flat-bottomed base. The object is  
surrounded by water or other non-volatile clear liquid. It  
is also common to have a plurality of small white "flakes"  
of material in the enclosure, so that when the globe is  
15 shaken, the flakes are mixed in the liquid and give the  
appearance of snow falling on the scene in the enclosure.

Other types of display articles include U.S. Patent 5,603,176, which discloses a jar containing a gel and an object movably suspended within the gel. The gel is a transparent liquid composed of a nontoxic inorganic clay 5 colloidal dispersion in water. In one embodiment disclosed, the jar simulates a fishbowl, with a plastic fish suspended in the gel. A second embodiment includes a gravel base in the bottom of the jar with the gel. While the patent teaches an object suspended in a gel above a gravel base, it 10 is for display purposes only and does not suggest using one or more substances having air freshening properties to support the solid object.

An enclosure with one flat viewing surface in the side is disclosed by U.S. Patent 5,406,728. The enclosure may be 15 made of glass or plastic and contain a figure and a liquid surrounding the figure. The liquid may contain glitter or particles resembling snow flakes. A picture or hologram is applied to the flat surface of the enclosure. Although the display article includes glitter suspended in a liquid, it 20 is also intended solely as a decorative article. The container has only one display face and it is not an air freshener.

U.S. Patent 5,187,889 teaches a globe holding a flowable solid material and solid objects, such as sand and 25 sea shells, which can be shaken to create new decorative scenes. The solid material and solid objects are inserted through a cap opening which is sealed closed to prevent the flowable solid from spilling out of the globe.

Air fresheners formed from volatile liquids which evaporate naturally are also known in the art. For example, an air freshener sold by Bath & Body Works, Inc. has a botanical object supported between layers of an air  
5 freshener gel. The air freshener is formed by pouring one layer of gel in liquid form into a container, placing the botanical object partly in the first layer and then pouring a second layer of the gel in liquid form to fill the container and surround the botanical object. The two layers  
10 are the same phase and appear to be one continuous translucent layer.

However, the prior art known to the inventor does not teach an air freshener of substantially the same composition in two phases having display articles supported on one phase  
15 and surrounded by the second phase.

#### SUMMARY OF THE INVENTION

It is an object of the present invention to provide an air freshener having decorative properties similar to a snow  
20 globe.

It is a further object to provide an air freshener having the appearance of two different substances made from substantially the same components to create a decorative scene with a solid object.

25 Accordingly, a snow globe air freshener is provided having a first phase of an air freshener composition forming an opaque base gel in a clear container and a second phase of the composition above the first phase forming a translucent or transparent top gel. A solid object may be

supported by the base gel in the container and surrounded by the top gel. Small pieces or flakes of a glitter material may be suspended in one or both of the top and base gels as well. Each of the top gel and base gel are volatile with air freshening qualities and evaporate when the container is open.

In a method for making the snow globe air freshener, the base gel is formed from several components mixed together, heated during mixing, poured into a suitable container and cooled to form a cloudy, relatively solid gel. While the base gel is still soft, solid decorative objects can be inserted into the base gel. The clear top gel is composed from a mixture of substantially the same components as the base gel. The top gel is mixed, heated and cooled while the base gel and solid object are cooled further. The top gel is poured into the container down the sides of the container, and upon filling, the entire container is chilled to finish the snow globe. Glitter material may be added to the base gel and/or the top gel.

The various features of novelty which characterize the invention are pointed out with particularity in the claims annexed to and forming a part of this disclosure. For a better understanding of the invention, its operating advantages and specific objects attained by its uses, reference is made to the accompanying drawing and descriptive matter in which a preferred embodiment of the invention is illustrated.

BRIEF DESCRIPTION OF THE DRAWING

The only drawing of the application is a front exploded elevational view of a snow globe air freshener with lid made according to the invention.

5       DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to the drawing, a snow globe air freshener 10 of the invention has two layers of gel, a base gel 30 and top gel 20 inside a transparent spherical container 15. Decorative objects 40 are located immersed in 10 the top gel and supported on the base gel. As shown in the drawing, a small portion of each object 40 is embedded in the base gel 30. Preferably, between 1/8 inch and 1/4 inch of each object 40 is embedded in the base gel 30.

15       Each of the top gel 20 and base gel 30 can have a glitter material 60 dispersed throughout the gel 20, 30.

20       The base gel 30 is preferably colored white to resemble a snow covered ground, while the top gel 20 is transparent to permit viewing of the objects 40. The ratio of base gel 30 to top gel 20 in the container 15 is approximately 1:10, but different proportions may be used to create different scenes.

25       The walls of the container 15 are preferably clear so that the objects 40 may be viewed from any side of the container 15. Thus, the air freshener 10 has the appearance of a decorative snow globe in which, however, the flakes do not move.

The following example provides a method for producing the snow globe air freshener 10 described above.

Example

The following table lists the components used to make the base gel 30 and the manufacturer of each component, where applicable:

	<u>Ingredient</u>	<u>Manufacturer</u>	<u>Percent</u>	<u>Range</u>
	Deionized Water		79.175	60-90
10	Potassium Citrate	Archer Daniels Midland	0.400	0.2-0.6
	Bitrex Solution (Super/B-SDA-40B)	Macfarlan Smith Ltd.	0.050	0.0-0.07
15	Disodium EDTA	Dow Chemical Versene	0.300	0.2-0.4
	Gellan Gum	Nutra Sweet	0.800	0.6-1.0
	Mica/titanium dioxide	Preperse	0.200	0-0.3
20	Titanium Dioxide	Whittaker & Clarke	0.1	0-0.2
	Octoxynol 13 (Igepal CA-720)	Rhone-Poulenec	6.000	4-8
25	SD Alcohol 40-2 (190 proof)	Eastman Chemical	3.000	1-5
	Dipropylene glycol	Dow Chemical	5.000	2-8
30	Fragrance Oils		5.000	2-8

Kathon CGICP	Rohm & Haas	0.060	0.04- 0.08
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The following table lists the components used to make the top gel 20 and the manufacturer of each component, where applicable:

	<u>Ingredient</u>	<u>Manufacturer</u>	<u>Percent</u>	<u>Range</u>
5	Deionized Water		79.347	60-90
10	Potassium Citrate	Archer Daniels Midland	0.400	0.2-0.6
15	Bitrex Solution (Super/B-SDA-40B)	Macfarlan Smith Ltd.	0.050	0.0 - 0.07
20	Disodium EDTA Versene	Dow Chemical	0.300	0.2-0.4
25	FD&C Blue #1 (.5% H <sub>2</sub> O/PG)	Warner Jenkinson	0.003	0.0 - 0.005
30	Gellan Gum	Nutra Sweet	0.800	0.6-1.0
	Polyethylene terephthalate and acrylates copolymer	Meadowbrook Inv.	0.100	0.05-0.2
	Octoxynol 13 (Igepal CA-720)	Rhone-Poulenec	6.000	4-8
	SD Alcohol 40-2 (190 proof)	Eastman Chemical	3.000	1-5
	Dipropylene glycol	Dow Chemical	5.000	2-8
	Fragrance Oils		5.000	2-8

Kathon CGICP	Rohm & Haas	0.060	0.04	-
			0.08	

Using the above materials, the base gel 20 is prepared first by mixing the deionized water, potassium citrate, bitrex solution and disodium EDTA in a steel beaker 5 surrounded by a hot water bath. The mixing may be done with a marine propeller type mixer. This solution, designated A, is temporarily set aside.

10 The octoxynol 13, SD Alcohol, dipropylene glycol and fragrance oils are mixed in a glass beaker and stirred with a spatula until clear and homogenous. This mixture is designated solution D.

15 Next, the gellan gum is dispersed in solution A with stirring while heating the mixture to about 80°C +/- 5°. The mixture is stirred until clear, then cooled to 60°C with constant stirring. The mica/titanium dioxide and titanium dioxide are then added to the mixture while stirring. Solution D is immediately added to the mixture and stirring is continued until the mixture is clear and homogenous. The temperature of the mixture is maintained at about 60°C with 20 stirring.

25 The mixture is then cooled to about 55°C while stirring, at which point the Kathon CGICP is added. After about one minute, the mixture is poured into the container 15 through the top opening 80 and allowed to cool at room temperature for between 5 and 10 minutes.

30 After cooling at room temperature, the objects 40 are placed gently into the base gel 30 between about 1/8 inch and 1/4 inch deep to hold the objects 40 in place. The base gel 30 and objects 40 are allowed to cool at room temperature for another 10-15 minutes.

While the base gel 30 cools, the top gel 20 is prepared using the materials above as follows.

For the top gel 20, the deionized water, potassium citrate, bitrex solution, disodium EDTA and FD&C Blue #1 are 5 mixed in a steel beaker surrounded by a hot water bath. The mixing may be done with a marine propeller type mixer. This solution, designated A2, is temporarily set aside.

As with the base gel 30, the top gel 20 components octoxynol 13, SD Alcohol, dipropylene glycol and fragrance 10 oils are mixed in a glass beaker and stirred with a spatula until clear and homogenous. This mixture is solution D.

The gellan gum is added to solution A2 with stirring while heating the mixture to about 80°C +/-5°C. The mixture is stirred until clear, and then it is cooled to about 60°C 15 while stirring. The polyethylene terephthalate and acrylates copolymer are added to the mixture while stirring, followed immediately by the addition of solution D. The mixture is stirred until it is clear and homogenous while keeping the temperature at about 60°C.

20 The temperature is then lowered to about 55°C and the Kathon CGICP is added to the mixture while stirring for about 1 minute.

The top gel 20 mixture is immediately poured down the sides of the container 15 to prevent bubbles from forming in 25 either the top gel 20, the base gel 30 or the interface between them. As soon as the container 15 is filled to an acceptable level with the top gel 20, it is placed in a chilled ice bath at a temperature of between 2-3°C for 30 minutes. The bath should surround the entire container 15 30 up to the top opening 80. The low temperature is necessary

to keep the polyethylene terephthalate dispersed throughout the gels 20, 30 and prevent it from settling in the bottom of the container 15.

5 The container 15 may then be capped and sealed for later use after cooling. The container 15 may be provided with a threaded neck at the top opening 80 for alternately connecting a solid lid (not shown) to seal the container 15 or a lid with perforations 90, to permit the air freshener to evaporate into the atmosphere of a room it is located 10 within.

15 While specific compositions have been related for use in making the gels 20, 30, it is possible to substitute different compositions having similar properties. For example, the octoxynol 13 may be replaced with another strong surface active agent having good hydrophilic qualities. DMDM Hydantion, such as DANATOGUARD PLUS made by Lonza, may be used in place of Kathon CGICP. Alternatively, a different preservative having similar properties to these 20 two compositions may be used.

25 Similarly, the potassium citrate and gellan gum may be replaced by a different carrageenan gum system which is clear when mixed and gelled as in the above examples.

Further, the chilling step may be accomplished using a rapid cooling tunnel or a freezer or refrigerator capable of 25 achieving the same temperature and cooling conditions as the ice bath.

While a specific embodiment of the invention has been shown and described in detail to illustrate the application of the principles of the invention, it will be understood

that the invention may be embodied otherwise without departing from such principles.

WHAT IS CLAIMED IS:

1. An air freshener having the appearance of a decorative snow globe, comprising:
  - a transparent container having a top opening;
  - 5 a volatile opaque base gel layer having air freshening qualities filling at least a lower portion of the container;
  - a volatile top gel layer which is translucent and having air freshening qualities filling at least an upper portion of the container above the base gel; and
  - 10 at least one solid object immersed in the top gel layer to form a decorative scene with the base gel layer and the top gel layer.
2. An air freshener according to claim 1, wherein the top gel layer and the base gel layer are substantially the same composition in different phases.
- 15 3. An air freshener according to claim 2, wherein the container is at least partially spherical.
4. An air freshener according to claim 2, wherein the at least one object is partly embedded in the base gel 20 layer.
5. An air freshener according to claim 4, wherein at least one of the base and top gel layers further comprises a glitter material randomly dispersed and fixed throughout the layer.

6. An air freshener according to claim 2, wherein at least one of the base and top gel layers further comprises a glitter material randomly dispersed throughout the layer.

5 7. An air freshener according to claim 1, wherein the top gel layer comprises a mixture of deionized water, potassium citrate, disodium EDTA, gellan gum, mica and titanium dioxide, octoxynol 13, SD alcohol, dipropylene glycol and Kathon CGICP.

10 8. An air freshener according to claim 7, wherein the base gel layer comprises a mixture of deionized water, potassium citrate, bitrex solution, disodium EDTA, gellan gum, mica and titanium dioxide, octoxynol 13, SD alcohol, dipropylene glycol, a fragrance oil and Kathon CGICP.

15 9. An air freshener according to claim 1, wherein the top gel layer comprises a mixture of a clear gel system, a suitable surface active agent to solublize the fragrance, a preservative, deionized water, disodium EDTA, polyethylene terephthalate and acrylates polymer, SD alcohol and dipropylene glycol.

20 10. An air freshener according to claim 9, wherein the base gel layer comprises a mixture of a clear gel system, a suitable surface active agent to solublize the fragrance, a preservative, deionized water, disodium EDTA, mica and titanium dioxide, SD alcohol and dipropylene glycol.

11. An air freshener according to claim 1, wherein the base gel layer comprises a mixture of deionized water, potassium citrate, bitrex solution, disodium EDTA, gellan gum, mica and titanium dioxide, octoxynol 13, SD alcohol, dipropylene glycol, a fragrance oil and Kathon CGICP.

5  
12. A method of making an air freshener having the appearance of a decorative snow globe, the method comprising:

10 providing a container with an open top;  
preparing a base gel of an air freshener composition;  
pouring the base gel into the container to form a base gel layer;  
treating the base gel layer to make the base gel layer opaque;  
15 inserting at least one solid decorative object into the container;  
preparing a top gel of an air freshener composition;  
pouring the top gel into the container over the base gel layer and at least one solid object; and  
20 treating the top gel layer to make the top gel layer one of transparent and translucent, so that the opaque base gel layer, at least one solid object and top gel layer make a decorative scene visible inside the container.

25  
13. A method according to claim 12, further comprising during preparing the top gel, adding a glitter material to the top gel.

14. A method according to claim 12, further comprising

16 during preparing the base gel, adding a glitter material to the base gel.

17 5 15. A method according to claim 12, wherein the pouring the top gel is done by pouring the gel down the sides of the container.

18 10 16. A method according to claim 15, wherein the treating the top gel layer comprises rapidly chilling the container with the top gel layer and base gel layer in an ice bath.

19 15 17. A method according to claim 12, wherein preparing the base gel comprises mixing deionized water, potassium citrate, disodium EDTA, gellan gum, mica and titanium dioxide, octoxynol 13, SD alcohol, dipropylene glycol, a fragrance oil and Kathon CGICP while heating and stirring.

20 15 18. A method according to claim 17, wherein preparing the top gel comprises mixing deionized water, potassium citrate, disodium EDTA, gellan gum, polyethylene terephthalate and acrylates polymer, octoxynol 13, SD alcohol, dipropylene glycol, a fragrance oil and Kathon CGICP while heating and stirring.

21 19. An air freshener substantially as herein described with reference to the accompanying drawing.

22 20. A method of making an air freshener substantially as herein described.



Application No: GB 9915164.9  
Claims searched: 1 to 20

Examiner: Graham S. Lynch  
Date of search: 21 September 1999

**Patents Act 1977**  
**Search Report under Section 17**

**Databases searched:**

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.Q): A5G (GV)

Int Cl (Ed.6): A61L 9/12

Other: On-line : WPI, EPODOC, JAPIO

**Documents considered to be relevant:**

Category	Identity of document and relevant passage	Relevant to claims
	None	

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.